



Idaho Produce Safety Video Series

Brought to you by:
Idaho State Department of Agriculture
University of Idaho Extension



Records Part 2: Agricultural Water

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****websites and links, CTRL+click to follow link****

Introduction:

Hello! This video will cover required record keeping for the Produce Safety Rule. Before we get started, let's review how the FDA Produce Safety Rule is laid out.

Notes

The Food and Drug Administration Produce Safety Rule is one part of the FDA code of Federal Regulations. This database includes a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government.

Within 21 Code of Federal Regulations Part 112 are subparts that include: general requirements, personnel qualifications and training, Health and Hygiene, Agricultural water, and more.



Pay attention to the word **MUST** and **SHOULD**. **MUST** indicates that it is required by the Produce Safety Rule. **SHOULD** indicates suggested good agricultural practices.

For example, under 21 CFR 112 Subpart D -- Health and Hygiene -- section 112.33 outlines measures you **MUST** take to prevent visitors from contaminating covered produce and food contact surfaces. We will reference subparts and sections throughout this presentation.

You may print out this presentation and keep it for your records to use anytime you would like. This will be available for viewing on the Idaho State Department of Agriculture and the University of Idaho Extension websites. It is a good idea to have a copy of the [Produce Safety Rule](#) with you, so you can reference the rule throughout this presentation and you may pause this video at any time.

The Food Safety Modernization Act Produce Safety Rule is focused on preventing foodborne outbreaks before they occur by taking a proactive approach instead of a reactionary approach to food safety.



The Produce Safety Rule requires a few very specific records to be kept and maintained on your farm to satisfy the requirements of this rule. Record keeping requirements are listed in each subpart of the Produce Safety Rule and under Subpart O -- Records. This presentation will cover the specific records you are required to keep under Subpart E -- Agricultural Water, Section 112.50.

Notes



If you're already keeping records for buyers or third-party auditors and those records contain the same information that's required by the Produce Safety Rule, there's no need to duplicate the records. Simply provide the records you have when requested.

If the records you're currently keeping DO NOT include the required information, your current record can be supplemented to include the required information or new information required by the rule may be kept separately or combined with existing records.

Produce Safety Alliance:

I'll be sharing some templates in this presentation that were created by the Produce Safety Alliance that you might consider adopting. The Produce Safety Alliance templates are available on the Produce Safety Alliance website and on the Idaho State Department of Agriculture website. You are not required to use these templates, there are many templates online available for your use.



You can also create your own farm specific template as long as they meet the requirements listed under Subpart O--Records 112.161. Let's get started!

Ag Water Records Overview:

There are **nine** different records required under the Agricultural Water Records portion of the rule. Documentation is only required if it applies to your operation, meaning if you are not performing a certain activity on your farm you do not have to keep records for it.

In section 112.12, FDA defines specific standards established in the rule for which they allow alternatives to be used in certain circumstances. Section 112.12 provides significant flexibility for individual farms to develop alternative standards suitable to their operations, but you ***MUST*** keep scientific data or information you rely on to support the alternative. The FDA does not require you to seek approval prior to establishing and using alternative methods, but you ***MUST*** provide documentation supporting any alternative methods used.

Notes



Inspections:

The **first** required record in section 112.50 is: The findings of the inspection of the agricultural water system. The rule requires all agricultural water systems to be inspected at the beginning of the growing season as appropriate but at least annually. More information on requirements for inspecting water systems is included in section 112.42. These requirements include adequately maintaining all agricultural water sources to the extent they are under your control.

It is important to include the date and time the observation was made, water source or distribution system, observations, and include any corrective actions taken. The corrective actions **SHOULD** be very specific and detailed.

Water System Inspection Record *Template*

Name and address of farm: _____

See farm policy for specific water distribution system inspection procedures.

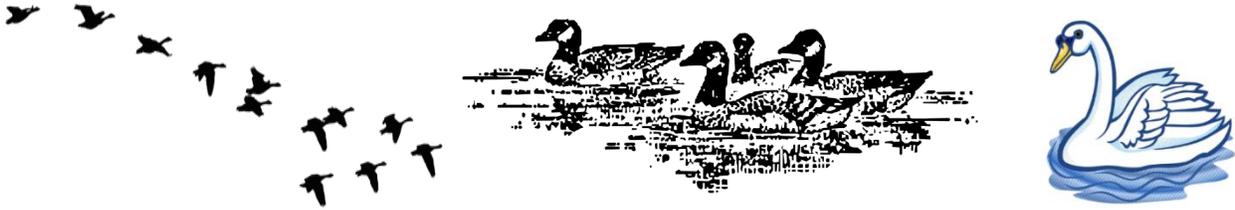
Date	Time	Water Source and/or Distribution System	Observations	Corrective Actions Taken	Initials
4/22/16	7:00 AM	Well 1, north field	Well casing in good shape, backflow prevention device in place, no broken pipes	None	EAB
4/22/16	9:00 AM	Pond, south field	Significant geese presence	Introduced swan decoys. Will monitor	EAB

Reviewed by: _____ Title: _____ Date: _____

FSMA PSR reference § 112.50(b)(1) Confidential Record

Modified from On-Farm Decision Tree Project: Agricultural Water for Production—v4 07/17/2014
E.A. Bihn, M.A. Schermann, A.L. Wszelaki, G.L. Wall, and S.K. Amundson, 2014 www.gaps.cornell.edu

Notes



The observation in this example are significant geese presence on and over the south field pond which may lead to contamination of the water. The corrective action was to introduce swan decoys and monitor. So, maybe in a week or two revisit this observation to see if the swan decoys worked. If they worked include this on the next line with the date, time, source, etc. If the decoys did not work you may want to try a different corrective action.

Results of Analytical Testing:

The **second** required water record is results of any analytical tests conducted on agricultural water to comply with the water quality provisions of Subpart E --Agricultural Water.

You **MUST** keep copies of the water sample results from the lab. The test results **MUST** be reviewed, dated, and signed by a supervisor or responsible party within a reasonable time after the records are made.



Treatment:

The **third** record relates to water treatment. If you are treating your water, you **MUST** show scientific data or information to support the adequacy of the treatment methods used.

Section 112.43(a) (1) and (2) requires that:

- **ANY TREATMENT METHOD USED MUST MAKE THE WATER SAFE AND OF ADEQUATE SANITARY QUALITY FOR ITS INTENDED USE;**
- **AND YOU MUST DELIVER ANY TREATMENT OF AGRICULTURAL WATER IN A MANNER TO ENSURE THAT THE TREATED WATER IS CONSISTENTLY SAFE.**
- **THE TREATMENT AND DELIVERY OF AGRICULTURAL WATER MUST MEET THE WATER QUALITY CRITERIA FOR PRODUCTION WATER AND/OR POST-HARVEST WATER AS APPLICABLE ON YOUR OPERATION AS MENTIONED IN SECTION 112.44.**

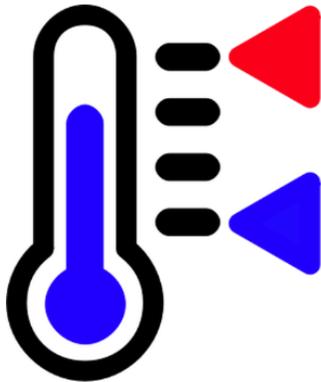
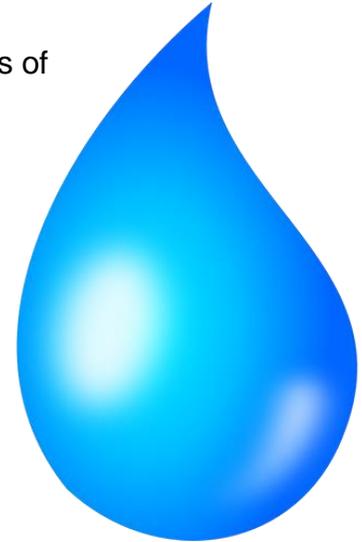
Notes

WATER TREATMENT OPTIONS MAY INCLUDE CHEMICAL METHODS, PHYSICAL TREATMENTS INCLUDING USING A PESTICIDE DEVICE AND OTHER SUITABLE METHODS AS ADDITIONAL TREATMENT OPTIONS.

Documentation of Water Results:

The **fourth** record pertains to the documentation of the results of water treatment monitoring carried out under 112.43(b).

For example: This may include water used for washing covered produce in dump tanks, flumes, wash tanks or any water that contacts produce or produce contact surfaces. The specific method for monitoring is operation-specific. This record is only needed if agricultural water is being treated. You are required to monitor any treatment of agricultural water at a frequency adequate to ensure that it meets the water quality criteria for production water and/or post-harvest water as applicable to your operation(s) and as mentioned in Subpart E--Agricultural water section 112.44. The monitoring frequency will depend greatly on the type of treatment used and what the water is being used for.



For example: chlorine is very sensitive to temperature and tends to evaporate into a gas if the water temperature is too high or if the water temperature is too low, the chlorine may not work as intended.

Water that is too cloudy or dirty will cause a sanitizer to bind up; therefore, be less effective. It is important to review chemical labels and directions for treatments used. All treatments used **MUST** be EPA approved for their intended use.

Water Treatment Template:

This template illustrates the use of chlorine to treat your water. Records would need to include:

Notes

- **NAME AND ADDRESS OF THE FARM**
- **DATE**
- **TIME**
- **WATER PH LEVELS**
- **WATER TEMPERATURE**
- **TURBIDITY**
- **CHLORINE SANITIZER LEVEL**
- **CORRECTIVE ACTION, IF NEEDED; AND**
- **INITIALS OF THE PERSON CONDUCTING THE MONITORING**

Water Treatment Monitoring Record Template

Name and address of farm: _____

Please see the food safety plan for overall water treatment procedures.

Date	Time	Water pH	Water Temperature	Turbidity	Sanitizer (name & rate)	Corrective Action Needed (yes or no)	Initials
10/14/16	8:35 am	8.5	65° F	25 NTU	NaOCl 75 ppm	Yes - pH was too high, added citric acid, retested - pH 7.0	EAB
10/14/16	12:00 pm	7.0	72° F	47 NTU	NaOCl 55 ppm	no	EAB

*Not all of the above factors may need to be recorded. Refer to the product's EPA label for specific use instructions.

Reviewed by: _____ Title: _____ Date: _____

FSMA PSR reference § 112.50(b)(4) Confidential Record

Modified from On-Farm Decision Tree Project: Postharvest Water—v7 07/16/2014
E.A. Bitt, M.A. Schermann, A.L. Wazlowski, G.L. Wall, and S.K. Amundson, 2014 www.gaps.cornell.edu

Microbial Die-Off:

The **fifth** required water record relates to microbial die-off which is one of three allowable corrective measures if production water does not meet quality criteria. More in-depth information on microbial die-off can be found in Subpart E -- Agricultural Water section 112.45.

If you use microbial die-off as a method to treat your agricultural water, you are required to document scientific data or information you relied upon to support the microbial die-off rate you used between harvest and end of storage to achieve the calculated log reduction of generic E. Coli. This may include other activities such as commercial washing. Scientifically valid data means an approach that is based on scientific information, data or results published in University publications, scientific journals, references, text books, or proprietary research.

There are many Universities and commodity associations that are doing research on microbial die-off rates. If you'd like more information on the current research, we encourage you to reach out to these groups. In the fifth required record you're asked to provide scientific data or information to support the method you've chosen to show microbial die-off.

Water Die Off Measures Template:

In the **sixth** required record you'll show how you implement the microbial die-off method you've chosen to use.

Notes

Documentation ***MUST*** include specific time interval or log reduction applied, how the time interval or log reduction was determined, and the dates of corresponding activities such as the dates of last irrigation and harvest, the dates of harvest and end of storage and/or the dates of activities such as commercial washing.

Field	Crop	Date and time of beginning of crop harvest	Date and time of end of last water application	Time interval since last water application	Harvest Supervisor Initials
2A	Cortland Apple	9/23/2016, 1:00 PM	9/21/2016, 4:00 PM	2 days	DMP
2A	Cortland Apple	9/25/2016, 10:00 AM	9/21/2016, 4:00 PM	4 days	DMP

* Attach documentation to support calculations (e.g. the Ag Water Excel Tool at wafs.ucdavis.edu). If a die-off rate other than the specified 0.5 log/day in § 112.45(b)(1) is used, include documentation supporting the alternative die-off rate as required by § 112.50(b)(8).

This record ***MUST*** be reviewed, dated, and signed by a supervisor or responsible party within a reasonable time after the records are made.

UC Davis Worksheet:

This is a great worksheet found on the University of California Davis, Western Center for Food Safety website that can help you keep track of the information for requirement #6.

Notes

Western Center for Food Safety

Real-World Solutions to Food Safety Challenges

Western Center for Food Safety

We research the interface between production agriculture and food protection, identify real-world solutions to food safety challenges in these systems, and communicate new knowledge through outreach and education.

Featured Research

Current Newsletter

Helpful Resources

When recording information in the spreadsheet the required initials and review signatures can be included in the notes line. You also want to add in the name and address of the farm and crop or field that this record applies to at the top of the form.

Table 1. Microbial water quality profile (MWQP) for a single untreated ground water source. CAUTION: Using fewer than 4 samples for GM and STV calculations does not satisfy the requirements of the rule.							Table 2. Your MWQP results based on 4 water samples. CAUTION: Using fewer than 4 samples for GM and STV calculations does not satisfy the requirements of the rule.			
Survey stage (Initial or Annual)	Sample date	Sample location or ID	Sample number	Generic E. coli CFU or MPN/100	Generic E. coli log CFU or	Notes	GM (Generic E. coli CFU or MPN/100)	GM (Generic E. coli log CFU or MPN/100)	STV (Generic E. coli CFU or MPN/100)	STV (Generic E. coli log CFU or MPN/100)
Initial	10/25/2015	1A	1	20	1.30		126	2.10	410	2.61
Initial	11/20/2015	2B	2	1	0.00	Sample result below LOD (<1 CFU/100)	25	1.40	1288	3.11
Initial	11/21/2015	3A	3	20	1.30		-101	-0.70	878	0.50
Initial	12/10/2015	4C	4	5	0.70		Yes		No	
Annual	4/8/2016	2B	1	2	0.30		No		Yes	
Annual	5/10/2017	3D	1	2000	3.30	Well malfunctioning and repair work	0		1	
							Disclaimer: The authors have taken every care to ensure that the output from this workbook is accurate. In making this tool available for use in calculations neither the authors nor Western Center for Food Safety UC Davis accept any liability for any consequences, direct or indirect resulting from a decision by the user to take, or not take, based on an output from this workbook.			

Public Water:

The **seventh** agricultural water record is specific to those farms using a public water system as a water source. It is required to keep annual documentation of the results or certificates of compliance from a public water system. These can be obtained from the water municipality or by the lab who conducted the testing. The name and location of the farm may need to be added to this record if it is not included so you are meeting all requirements listed under Subpart O -- Record Keeping.

Alternative Methods:

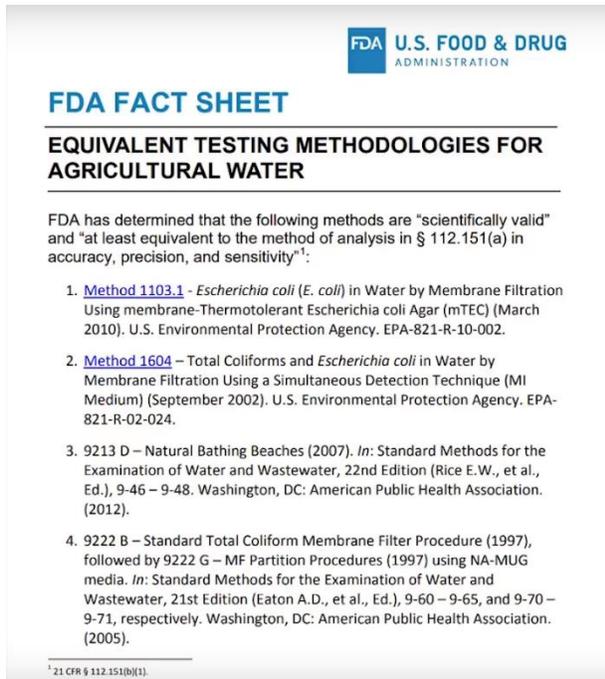
The **eighth** record relates to alternative methods you may use in lieu of the requirements of Subpart E -- Agricultural Water. If you choose any of the alternative methods listed in section 112.49, you **MUST** keep documentation of scientific data or information you relied upon to support any alternative water quality criteria, die-off rates or sampling frequencies that you establish and use on your farm.

Notes

Water Testing Methods:

Lastly, the **ninth** required record relates to the accepted water testing methods. There are nine water testing methods approved by FDA as acceptable for use in testing agricultural water. If you choose to use a test method outside of the nine approved methods, you **MUST** have documentation to support any equivalent analytical methods.

For a list of the nine methods approved by FDA and many other useful resources, please visit the Idaho State Department of Agriculture website under the Food Safety Modernization Act page.



FDA Resources:

Remember all nine of the agricultural water record keeping requirements can be found in section 112.50 of the FDA Produce Safety Rule.

In addition to the items that **MUST** be listed on all records that we've discussed throughout this video, **Subpart O—Records** includes general information about the storage of your records, allowable types of records you keep, and acceptable formats for the records.

And as a reminder, if you're using records for compliance with other regulations, the records do not need to be duplicated so long as they contain the information

needed for compliance with the Produce Safety Rule. You may need to adjust or supplement your current records to include required items listed in the Produce Safety Rule.

Records Overview:

Records required by the Produce Safety rule **MUST** be kept as original records true copies such as photocopies, pictures, scanned copies, microfilm, microfiche, any other accurate reproductions of the original records, or electronic records. The original records **MUST** be completed at the time when the activity is performed and they **MUST** be dated and have the operator's original signature or initials on them.

Records **MUST** be accurate, legible, clearly readable, and indelible, which means permanent or written in ink.

Notes

If you make a mistake on a record, simply strike through the mistake with one single indelible line, date and initial it; then legibly write the correct information next to it.

Records ***MUST*** be kept for at least 2 years past the date the record was created. All required records ***MUST*** be readily available and accessible for inspection upon request. Offsite storage is permitted if records can be retrieved and provided onsite within 24 hours of a request for review by an inspector. All records obtained in accordance with the Produce Safety Rule are subject to the disclosure requirements under 21 CFR 20-Public Information Act.

In summary, record keeping is a critical step in documenting the steps you've taken to reduce food safety risk on the farm and meet the requirements of the Produce Safety Rule.

Don't hesitate to contact the Idaho State Department of Agriculture or University of Idaho Extension for more information on record keeping requirements related to the Produce Safety Rule.



Thank you!

References:

1. "Produce Safety Alliance." *Welcome to the Produce Safety Alliance Website!* Produce Safety Alliance, www.producesafetyalliance.cornell.edu/
2. NASDA, www.nasda.org/
3. US Food and Drug Administration Home Page, Center for Biologics Evaluation and Research, www.fda.gov/
4. "UC Davis." *UC Davis*, www.ucdavis.edu/
5. ECFR.io. "e-CFR: Code of Federal Regulations." *ECFR.io*, www.ecfr.gov/
6. "Produce Safety Rule." *University of Idaho*,

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www.uidaho.edu/extension/food-safety-for-produce-growers/food-safety-modernization-act/produce-safety-rule

7. "Idaho State Department of Agriculture." *Idaho State Department of Agriculture*, www.agri.idaho.gov/main/

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Presented by Idaho State Department of Agriculture and University of Idaho Extension

Funding for this video was made possible, in part, by grant number 5U18FD005916-02 from the FDA. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

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